AQUAZONE™

50RHC, 50RVC018-060 STANDARD EFFICIENCY WATER SOURCE HEAT PUMPS

— PERFORMANCE DATA

— DIMENSION PRINTS

© Copyright 2002 Carrier Corporation • Syracuse, New York 13221

Form 50RHC,RVC-1SB Replaces: New Printed in U.S.A. 7-02 Catalog No. 515-00020

Date:	Supersedes:	**50RHC, 50RVC STANDARD EFFICIENCY WATER SOURCE HEAT PUMPS**	50RHC, 50RVC	Rev:
JOB NAME:		LOCATION:		
BUYER:		BUYER P.O. #	CARRIER #	
UNIT NUMBER:		MODEL NUMBER:		
PERFORMANCE DATA CERTIFIED BY:			DATE:	

DESCRIPTION

Carrier's Aquazone™ single-packaged horizontal and vertical water source heat pumps provide the optimum balance between maintaining occupant comfort, high product quality, and low energy utilization. The flexible water source heat pump design is user friendly to both system designers and service personnel.

Aquazone horizontal and vertical water source heat pumps are designed for quality and high performance over a lifetime of operation. The 50RHC,RVC standard efficiency models offer cooling EERs (Energy Efficiency Ratios) to 13.0 and heating COPs to 4.6. Efficiencies stated are in accordance with standard conditions under ISO (International Organization for Standardization) Standard 13256-1 and provide among the highest ratings in the industry, exceeding ASHRAE (American Society of Heating, Refrigeration and Air Conditioning Engineers) 90.1 Energy Standards.

All units are manufactured to meet extensive quality control protocol from start to finish through an automated control system, which provides continuous monitoring of each unit and performs quality control checks as equipment progresses through the production process.

STANDARD UNIT FEATURES

- Corrosion protected, heavy gage galvanized sheet metal lined with $^1/_2$ in. thick, $1^1/_2$ lb. acoustic type insulation.
- Compressor isolating grommets are specially selected for each compressor size.
- Permanent split capacitor (PSC) three-speed blowers.
- Blower motors operate at lower temperatures.
- Sealed refrigerant circuit provided with a capillary tube assembly includes a reciprocating compressor.
- Reversing valve (4-way valve).
- Water-to-refrigerant coaxial (tube in tube) coil.
- Enhanced aluminum fin/rifled copper tube air-to-refrigerant heat exchanger coil.
- Fan motor insulation and compressor grommets for sound isolation.
- Low speed blowers are used for quiet operation through reduced outlet air velocities.
- Four airflow configurations for horizontal units.
- Horizontal units are field convertible from left or right discharge to back discharge.
- Three airflow patterns for vertical units with front, right or left return.
- Water temperature range between 60 F and 95 F.
- Water flow rates as low as 1.5 gpm per ton.
- High-pressure switch.
- Low-pressure sensor to detect loss of refrigerant.
- Low air temperature sensor to safeguard against freezing.
- Water loop temperature monitoring.
- Voltage protection.
- Water coil freeze protection.
- Standard electronic condensate overflow shutdown.
- All units are pre-wired and factory charged with refrigerant.
- Horizontal units are provided with factory-installed hanger isolation brackets.
- Vertical units are provided with an internally trapped condensate drain to reduce labor associated with installing an external trap for each unit.
- Water connections (FPT) and condensate drains (FPT) are anchored securely to the unit cabinet.
- Complete C solid-state control system provides control of unit compressor, reversing valve, fan, safety features, and troubleshooting fault indication features.

CUT ALONG DOTTED LINE

CUT ALONG DOTTED LINE

PERFORMANCE DATA

UNIT

Operating Weight _____ lbs

Shipping Weight _____ lbs

COOLING

Total Capacity _____ Btuh

Sensible Capacity _____ Btuh

Unit CFM _____

Total Heat of Rejection _____ Btuh

Entering Water Temperature _____ °F

GPM _____

Water Pressure Drop _____ ft wg

Unit Power Input _____ kW

HEATING

Total Capacity _____ Btuh

Unit CFM _____

Total Heat of Absorption _____ Btuh

Entering Water Temperature _____ °F

GPM _____

Water Pressure Drop _____ ft wg

Unit Power Input _____ kW

ELECTRICAL DATA

Power Supply to Unit _____ Volts _____ Phase _____ Hz

Minimum Circuit Amps _____ Maximum Fuse Amps _____

COMPLETE C CONTROL FEATURES

- Anti-short cycle timer
- Random start delay
- Condensate overflow protection
- High and low pressure refrigerant protection
- High and low voltage protection
- Automatic intelligent reset
- Accessory output
- Performance monitor (PM)
- Water coil freeze protection
- Air coil freeze protection
- Service Test mode with LED
- Alarm relay setting

FACTORY-INSTALLED OPTIONS

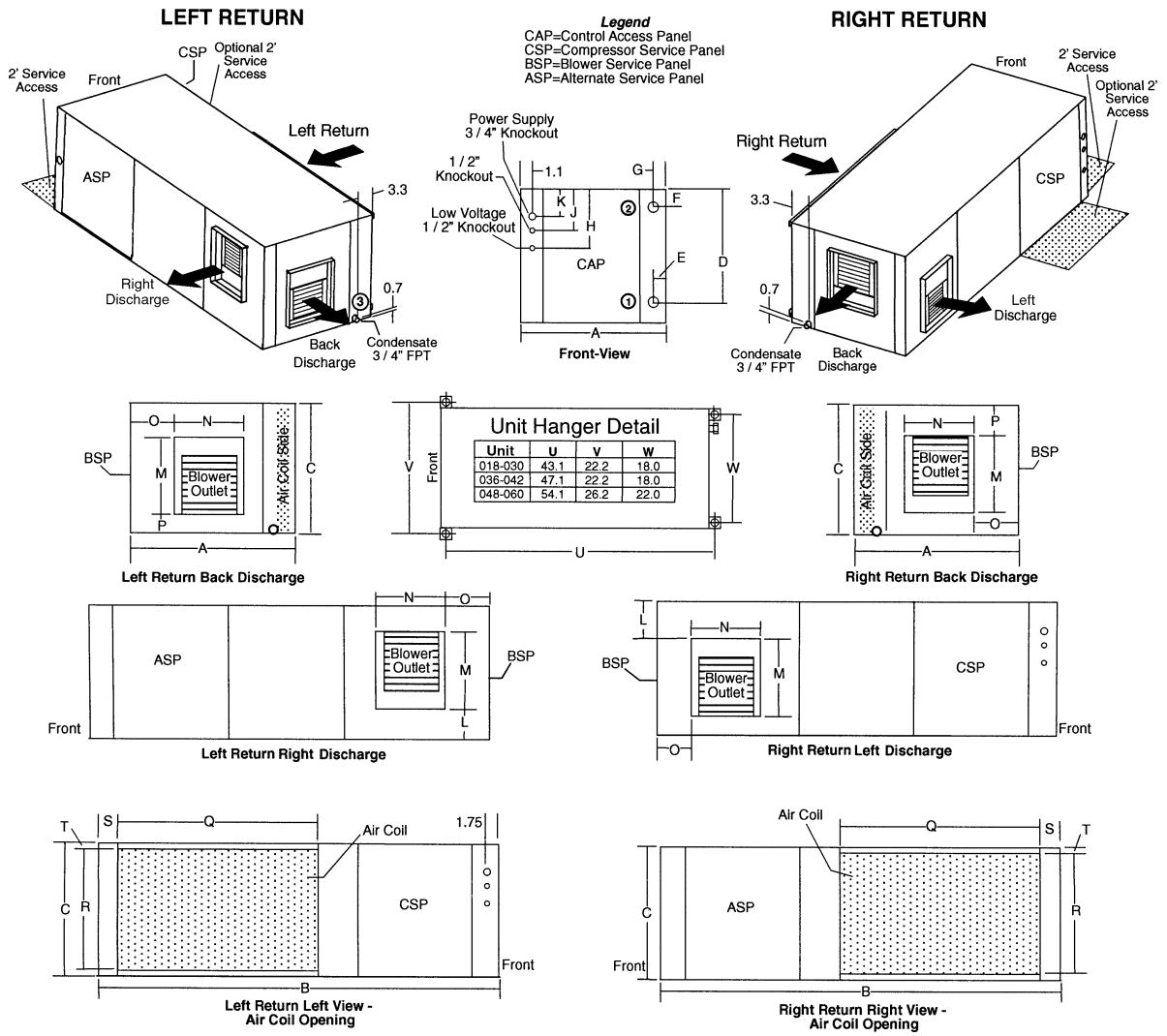
- ☐ Cupronickel Heat Exchangers
- ☐ Sound Attenuation Package (Mute Package)
- ☐ High Static Blower
- ☐ Deluxe D Control System (with 75 VA transformer)
- ☐ PremierLink™ Control

FIELD-INSTALLED ACCESSORIES

- ☐ Hose Kit Assembly
- ☐ Ball Valves
- ☐ Y Strainers
- ☐ Solenoid Valves
- ☐ Aquazone™ Thermostats
- ☐ Loop Controller
- ☐ Filter Rack (2 in.)
- ☐ Supply/Return Hose Kit
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

DIMENSION PRINT

50RHC018-060 UNITS



50RHC UNITS		OVERALL CABINET			WATER CONNECTIONS				ELECTRICAL KNOCKOUTS			DISCHARGE CONNECTIONS duct flange (± 0.10 in.)					RETURN CONNECTION using return air opening			
		A Width	B Depth	C Height	1 — In		2 — Out		H 1/2-in. Cond	J 1/2-in. Cond	K 3/4-in. Cond	L	M Supply Height	N Supply Depth	O	P	Q Return Depth	R Return Height	S	T
					D	E	F	G	Low Voltage	Low Voltage	Power Supply									
018-030	in.	20.1	43.1	17.1	15.3	2.4	1.9	2.1	12.1	9.1	6.1	2.6	13.3	9.9	4.1	1.3	23.0	15.0	1.1	1.0
	cm.	51.1	109.5	43.4	38.9	6.1	4.9	5.3	30.8	23.2	15.6	6.6	33.8	25.1	10.5	3.3	58.4	38.1	2.8	2.5
036-042	in.	20.1	47.1	21.1	18.8	2.2	4.7	1.2	16.1	13.1	10.1	2.5	16.1	11.0	3.0	2.5	25.9	19.0	1.1	1.0
	cm.	51.1	119.6	53.6	47.6	5.5	11.9	3.0	41.0	33.3	25.7	6.3	40.9	27.9	7.7	6.4	65.8	48.3	2.8	2.5
048	in.	24.1	54.1	21.1	19.4	5.9	4.3	2.3	16.1	13.1	10.1	3.7	16.1	13.7	4.1	1.3	35.9	19.0	1.1	1.0
	cm.	61.2	137.4	53.6	49.2	14.9	11.0	5.8	41.0	33.3	25.7	9.5	41.0	34.8	10.3	3.2	91.2	48.3	2.8	2.5
060	in.	24.1	54.1	21.1	19.4	5.9	4.3	2.3	16.1	13.1	10.1	1.7	18.1	13.7	4.1	1.3	35.9	19.0	1.1	1.0
	cm.	61.2	137.4	53.6	49.2	14.9	11.0	5.8	41.0	33.3	25.7	4.4	46.0	34.8	10.3	3.2	91.2	48.3	2.8	2.5

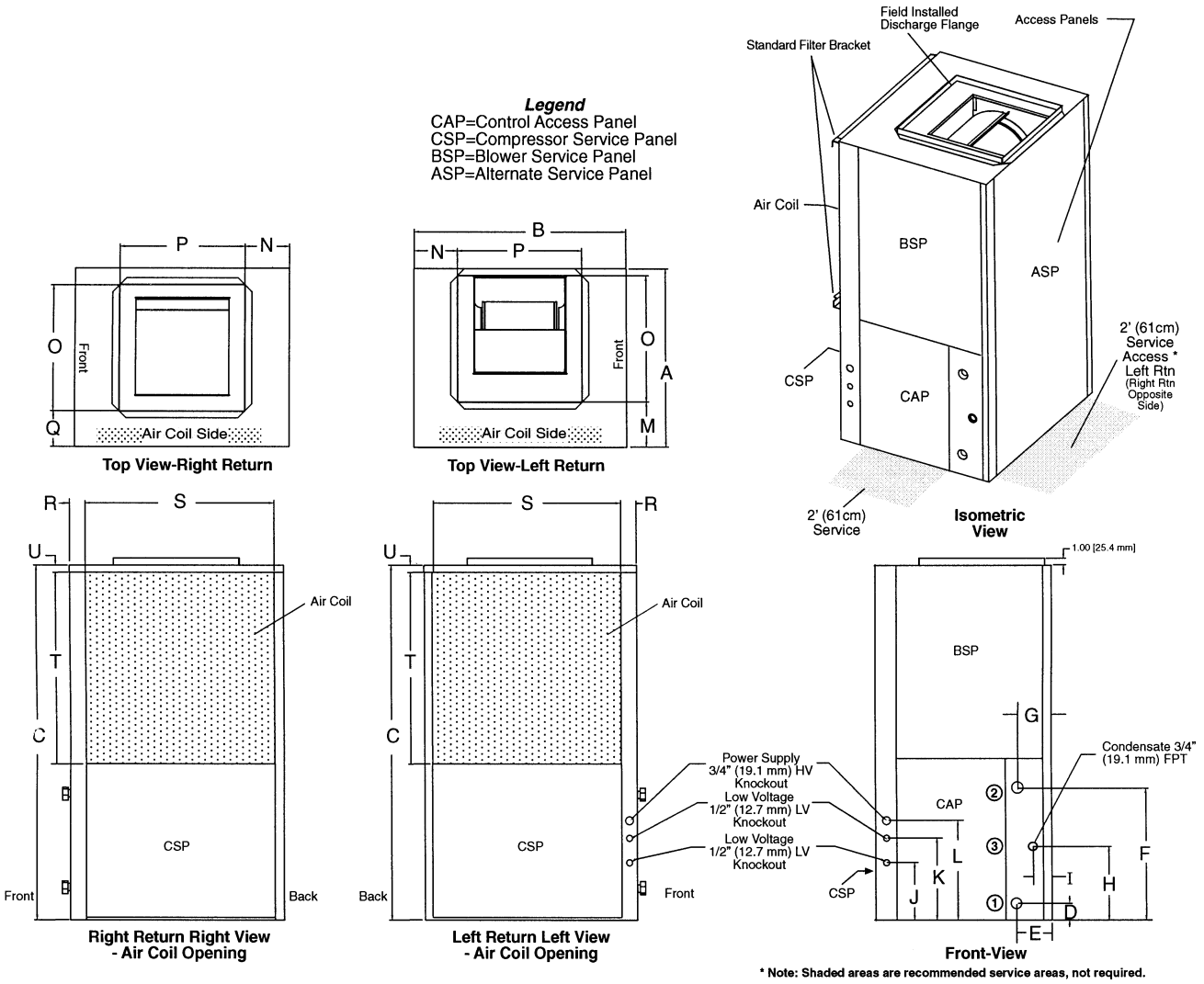
NOTES:
1. Condensate is 3/4-in. FPT copper.
2. Horizontal unit shipped with filter bracket only. This bracket should be removed for return duct connection.
3. Hanger kit is factory installed.
4. Verify high static option discharge connection dimensions with Carrier.

CUT ALONG DOTTED LINE

CUT ALONG DOTTED LINE

DIMENSION PRINT

50RVC018-060 UNITS



50RVC UNITS		OVERALL CABINET			WATER CONNECTIONS							ELECTRICAL KNOCKOUTS			DISCHARGE CONNECTION duct flange installed (±0.10 in.)					RETURN CONNECTION using return air opening			
		A Width	B Depth	C Height	1		2		3		Water FPT Size	J 1/2-in. cond	K 1/2-in. cond	L 3/4-in. cond	M	N	O Supply Width	P Supply Depth	Q	R	S Return Depth	T Return Height	U
					D	E	F	G	H	I		Low Voltage	Low Voltage	Power Supply									
					In		Out		Condensate														
018-030	in.	21.5	21.5	39.0	1.8	3.8	15.2	3.6	8.1	2.3	3/4″	4.1	7.1	10.1	6.4	3.8	14.0	14.0	5.3	2.3	18.3	20.2	0.7
	cm.	54.6	54.6	99.1	4.5	9.7	38.6	9.1	20.6	5.8	1.9	10.5	18.1	25.7	16.1	9.5	35.6	35.6	13.6	5.8	46.5	51.3	1.9
036 & 042	in.	21.5	26.0	44.0	2.0	3.7	16.2	2.6	10.4	2.3	3/4″	4.1	7.1	10.1	6.4	3.8	14.0	14.0	5.1	2.3	22.8	24.2	0.7
	cm.	54.6	66.0	111.8	5.1	9.4	41.1	6.6	26.4	5.8	1.9	10.5	18.1	25.7	16.1	9.5	35.6	35.6	13.1	5.8	57.9	61.4	1.9
041	in.	21.5	21.5	39.0	1.7	3.6	16.4	2.6	8.1	2.3	3/4″	4.1	7.1	10.1	6.4	3.8	14.0	14.0	5.3	2.3	18.3	20.2	0.7
	cm	54.6	54.6	99.1	4.4	9.1	41.7	6.6	20.6	5.8	1.9	10.5	18.1	25.7	16.1	9.5	35.6	35.6	13.6	5.8	46.5	51.3	1.9
048-060	in.	24.0	32.5	46.0	1.8	5.9	16.7	2.3	10.1	2.3	1″	4.1	7.1	10.1	6.9	7.3	16.0	18.0	5.1	2.3	29.3	24.2	0.7
	cm.	61.0	82.6	116.8	4.5	14.9	42.4	5.8	25.7	5.8	2.5	10.5	18.1	25.7	17.4	18.4	40.6	45.7	13.1	5.8	74.4	61.4	1.9

NOTES:
1. Condensate is 3/4 in. (19.1 mm) FPT.
2. Filter bracket extending from unit 2.5 in. (6.4 cm). This bracket should be removed when connecting return duct.
3. Discharge flange field installed.